

Additional File 4. Comparison of the refined framework, closed sort task, and open sort task groupings

Original Framework Domains + related ICCs and congruency	Refined framework domain name and constructs	Closed Sort Task		Open Sort Task		
		Constructs achieving p<.05 ^a (in order of confidence rating high – low)	Mean Confidence rating (95% Conf. Int. Lower, Upper)	Construct clusters (in order of s(i) values – decreasing; <i>Italicised</i> constructs silhouette value <.25)	Silhouette values s(i)	Av. s(i) of cluster s(i)
1. Knowledge ICC(C,1) = 0.39 CS Cong. = 40% OS Cong. = 0%	1. Knowledge Knowledge ^b Procedural knowledge Knowledge of task environment	Knowledge ^b Procedural knowledge Knowledge of task environment	8.50*** (6.91, 10.00) 6.72*** (4.79, 8.65) 6.33** (4.22, 8.44)	- No cluster representing Knowledge -	-	-
2. Skills ICC(C,1) = 0.38 CS Cong. = 88% OS Cong. = 75%	2. Skills Skills Skills development Competence Ability Interpersonal skills Practice Skill assessment	Skills Skills development Competence Ability Interpersonal skills Practice Skill assessment	8.56*** (7.24, 9.87) 7.11*** (5.34, 8.88) 6.39*** (4.49, 8.29) 6.33*** (4.43, 8.23) 5.61** (3.47, 7.76) 5.56** (3.41, 7.70) 4.39* (2.31, 6.46)	Competence Skills Skill assessment Ability Interpersonal skills Skills development Procedural knowledge	0.59 0.56 0.48 0.48 0.39 0.38 0.25	- <i>0.45</i>
3. Social/ Professional Role and Identity ICC(C,1) = 0.34 CS Cong. = 70% OS Cong. = 40%	3. Social/ Professional Role and Identity Professional identity Professional role Social identity Identity Professional boundaries Professional confidence Group identity Leadership Organisational commitment	Professional identity Professional role Social identity Identity Professional boundaries Professional confidence Leadership Group identity Organisational commitment	8.06*** (6.45, 9.66) 7.94*** (6.38, 9.51) 6.17** (4.09, 8.24) 6.06** (4.01, 8.1) 6.00*** (4.19, 7.81) 6.00*** (4.00, 8.00) 5.33** (3.52, 7.15) 5.17** (3.15, 7.18) 4.39** (2.74, 6.04)	Organisational development Organisational culture/climate Management commitment Professional role Crew resource management Leadership Change management Professional boundaries Organisational commitment Supervision Professional identity Project management <i>Champions / To champion</i> <i>Team working</i> <i>Power</i> <i>Hierarchy</i>	0.50 0.45 0.41 0.40 0.38 0.37 0.36 0.36 0.35 0.34 0.34 0.31 <i>0.19</i> <i>0.13</i> <i>0.02</i> <i>-0.03</i>	0.38 <i>0.31</i>
4. Beliefs about Capabilities ICC(C,1) = 0.40 CS Cong. = 70%	4. Beliefs about Capabilities Self-confidence Perceived competence	Self-confidence Perceived competence	8.06*** (6.84, 9.27) 7.78*** (6.23, 9.33)	Self-efficacy Perceived competence	0.59 0.56	0.50 <i>0.45</i>

OS Cong. (Beliefs about Capabilities cluster) = 60%	Self-efficacy Perceived behavioural control Beliefs Self-esteem Empowerment Professional confidence	Self-efficacy Perceived behavioural control Self-esteem Beliefs Empowerment Professional confidence	6.94*** (4.94, 8.95) 6.89*** (5.06, 8.72) 6.50*** (4.85, 8.15) 6.06*** (4.21, 7.9) 4.61* (2.45, 6.78) 4.39* (2.11, 6.67)	Self-confidence Perceived behavioural control Professional confidence <i>Self-esteem</i>	0.55 0.51 0.27 0.20	
OS Cong. (Optimism cluster) = 20%	5. Optimism Optimism Pessimism Unrealistic optimism Identity			Optimism Pessimism Unrealistic optimism Identity <i>Mindsets</i>	0.51 0.42 0.35 0.25 -0.01	0.38 0.31
5. Beliefs about Consequences ICC(C,1) = 0.25 CS Cong. = 26% OS Cong. (Beliefs about Consequences cluster) = 21%	6. Beliefs about Consequences Outcome expectancies Chars. of outcome expectancies ^b Beliefs Consequents Anticipated regret	Outcome expectancies Chars. of outcome expectancies ^b Beliefs Consequents Anticipated regret	7.61*** (6.06, 9.17) 6.17*** (4.14, 8.19) 5.11*** (2.93, 7.29) 4.67* (2.34, 6.44) 4.39* (2.44, 6.89)	Beliefs Attitudes Outcome expectancies Chars. of outcome expectancies ^b <i>Illness representations</i>	0.61 0.58 0.56 0.43 0.22	0.55 0.48
OS Cong. (Reinforcement cluster) = 38%	7. Reinforcement Rewards ^b Incentives Punishment Sanctions Contingencies Reinforcement Consequents			Rewards ^b Incentives Punishment Sanctions Contingencies Reinforcement Consequents	0.68 0.64 0.60 0.51 0.46 0.45 0.42	- 0.54
6. Motivation and Goals ICC(C,1) = 0.38 CS Cong. = 80% OS Cong. (Intentions cluster) = 60%	8. Intentions Stability of intentions Stages of change model Trans. model and stages of change ^b	Goals (autonomous, controlled) Intrinsic motivation Goal target /setting Distal and proximal goals Goal priority Intention Stability of intentions Certainty of intentions	7.83*** (6.28, 9.39) 7.78*** (6.21, 9.35) 7.67*** (6.21, 9.12) 7.33*** (5.86, 8.81) 6.39*** (4.33, 8.45) 5.72** (3.57, 7.88) 4.89* (2.73, 7.05) 4.56* (2.58, 6.53)	Stability of intentions Stages of change model Trans. model and stages of change ^b <i>Certainty of intentions</i> <i>Intention</i> <i>Commitment</i> <i>Intrinsic motivation</i> <i>Mods. of the intention-behaviour gap^b</i>	0.27 0.26 0.25 0.23 0.18 0.13 0.12 -0.06	0.26 0.17
OS Cong. (Goals cluster) = 40%	9. Goals Goals (distal / proximal) Goal priority Goal / target setting			Goal target/ setting Goals (distal / proximal) Goal priority	0.54 0.44 0.44	0.40 0.38

	Goals (autonomous / controlled) Action planning Implementation intention Goals (distal / proximal)			Goals (autonomous / controlled) Action planning Implementation intention <i>Representation of tasks</i>	0.39 0.35 0.26 0.22	
7. Memory, Attention and Decision Processes ICC(C,1) = 0.31 CS Cong. = 100% OS Cong. = 100%	10. Memory, attention and decision processes Memory Attention Attention control Decision making Cognitive overload / tiredness	Memory Attention Attention control Decision making Cognitive overload / tiredness	8.33*** (6.70, 9.97) 7.89*** (6.36, 9.41) 7.06*** (5.30, 8.81) 6.72*** (4.79, 8.65) 3.50* (1.74, 5.26)	Memory <i>Attention control</i> <i>Attention</i> <i>Decision making</i> <i>Appraisal</i> <i>Schemas</i> <i>Cognitive overload / tiredness</i>	0.25 0.24 0.23 0.03 0.01 -0.12 -0.20	0.25 0.06
8. Environmental Context and Resources ICC(C,1) = 0.26 CS Cong. = 50% OS Cong. = 75%	11. Environmental Context and Resources Environmental stressors Resources/material resources Barriers and facilitators Organisational culture/climate Person x environment interaction Salient events/critical incidents	Environmental stressors Resources/material resources Barriers and facilitators Organisational culture climate Person x environment interaction Salient events / critical incidents	7.94*** (6.74, 9.14) 6.61*** (4.66, 8.56) 5.11** (3.20, 7.02) 5.06** (3.08, 7.03) 4.72** (2.77, 6.67) 4.61** (2.79, 6.43)	<i>Conflict- comp. demands, conf. roles^b</i> <i>Barriers and facilitators</i> <i>Environmental stressors</i> <i>Salient events / critical incidents</i> <i>Resources / material resources</i> <i>Coping strategies</i> <i>Knowledge of task environment</i> <i>Person x environment interaction</i> <i>Control of behaviour, material and social environment</i> <i>Knowledge</i> <i>Empowerment</i> <i>Negotiation</i> <i>Anticipated regret</i> <i>Threat</i> <i>Past Behaviour</i>	0.03 0.02 -0.02 -0.05 -0.05 -0.10 -0.13 -0.13 -0.14 -0.14 -0.19 -0.20 -0.21 -0.22 -0.22	- -0.12
9. Social Influences ICC(C,1) = 0.38 CS Cong. = 27% OS Cong. = 27%	12. Social Influences Social pressure Social norms Group conformity Social comparisons Group norms Social support Intergroup conflict Power Group identity	Social pressure Social norms Group conformity Social comparisons Group norms Social support Intergroup conflict Power Group identity	8.89*** (8.38, 9.4) 7.61*** (6.04, 9.18) 7.39*** (6.34, 8.44) 7.22*** (6.10, 8.35) 7.17*** (5.39, 8.94) 7.06*** (5.03, 9.08) 5.61*** (3.85, 7.37) 5.00** (3.08, 6.92) 4.89** (2.84, 6.93)	Group norms Group conformity Group identity Social pressure Social norms Social support Alienation Social comparisons Intergroup conflict	0.71 0.68 0.67 0.67 0.64 0.63 0.62 0.58 0.47	- 0.62

	Alienation Modelling	Alienation Modelling	4.56** (2.56, 6.55) 4.44* (2.34, 6.55)	Social identity	0.45	
10. Emotion ICC(C,1) = 0.45 CS Cong. = 77% OS Cong. = 77%	13. Emotion Anxiety Fear Affect Stress Depression Positive / negative affect Burn-out	Anxiety Fear Affect Stress Depression Positive / negative affect Burn-out	8.33*** (7.05, 9.62) 8.17*** (6.64, 9.69) 8.17*** (6.62, 9.71) 7.22*** (5.47, 8.97) 7.11*** (5.31, 8.91) 6.44*** (4.31, 8.58) 5.72** (3.69, 7.75)	Anxiety Depression Positive / negative affect Stress Fear Affect Burn-out	0.69 0.67 0.57 0.57 0.56 0.54 0.52	- 0.59
11. Behavioural Regulation ICC(C,1) = 0.14 CS Cong. = 20% OS Cong. = 20%	14. Behavioural Regulation Self-monitoring Breaking habit Action planning	Self monitoring Breaking habit Action planning	6.89*** (5.20, 8.58) 5.78*** (4.08, 7.47) 4.94*** (2.82, 7.06)	<i>Learning</i> <i>Review</i> <i>Breaking habit</i> <i>Direct experience</i> <i>Self-monitoring</i> <i>Evaluation</i> <i>Generating alternatives</i> <i>Feedback</i> <i>Practice</i> <i>Sensitisation</i> <i>Routine / automatic / habit</i> <i>Modelling</i>	0.22 0.18 0.16 0.16 0.15 0.06 0.05 0.04 -0.04 -0.05 -0.06 -0.13	- 0.06
12. Nature of the Behaviours ICC(C,1) = 0.07 CS Cong. = 20%		Routine / automatic / habit	4.89** (2.82, 6.96)			

Constructs removed in refinement of framework (i.e. received low confidence ratings (<3), low silhouette value (<.25) or were associated with redundant domains and were not allocated elsewhere): ‘Appraisal’, ‘Attitudes’, ‘Certainty of intentions’, ‘Champions / To champion’, ‘Change management’, ‘Commitment’, ‘Conflict - competing demands’, ‘conflicting roles’, ‘Control of behaviour, material and social environment’, ‘Coping strategies’, ‘Crew resource management’, ‘Direct experience’, ‘Evaluation’, ‘Feedback’, ‘Generating alternatives’, ‘Hierarchy’, ‘Illness representations’, ‘Intention’, ‘Intrinsic motivation’, ‘Learning’, ‘Management commitment’, ‘Mindsets’, ‘Moderators of the intention - behaviour gap’, ‘Negotiation’, ‘Organisational development’, ‘Past behaviour’, ‘Project management’, ‘Representation of tasks’, ‘Review’, ‘Routine / automatic / habit’, ‘Schemas’, ‘Sensitisation’, ‘Supervision’, ‘Team working’, ‘Threat’.

(key: *= $p < 0.05$, **= $p < 0.01$, ***= $p < 0.001$, CS / OS Cong. = Closed Sort / Open Sort Congruency (% of original framework constructs included in sort task domains), Non-Italicised Av. S(i) value = excluding constructs in cluster whose values <0.25, Italicised Av. S(i) value = including all constructs forming cluster in that domain, ^a = after applying Hochberg’s correction for multiple comparisons within each domain; ^b Chars. of outcome expectancies = Characteristics of outcome expectancies, Conflict - comp. demands, conf. roles = Conflict - competing demands, conflicting roles, Knowledge = Knowledge (including knowledge of condition /scientific rationale), Mods. of the intention-behaviour gap = Moderators of the intention-behaviour gap, Rewards = Rewards (proximal / distal, valued / not valued, probable / improbable), Trans. model and stages of change = Transtheoretical model and stages of change.